

Express Mail No.: EL 679458715 US  
 Applicant: Benjamin Chu  
 Title: QUASI-INTERPENETRATING NETWORKS  
 USED AS SEPARATION MEDIA  
 Our Docket: 178-314  
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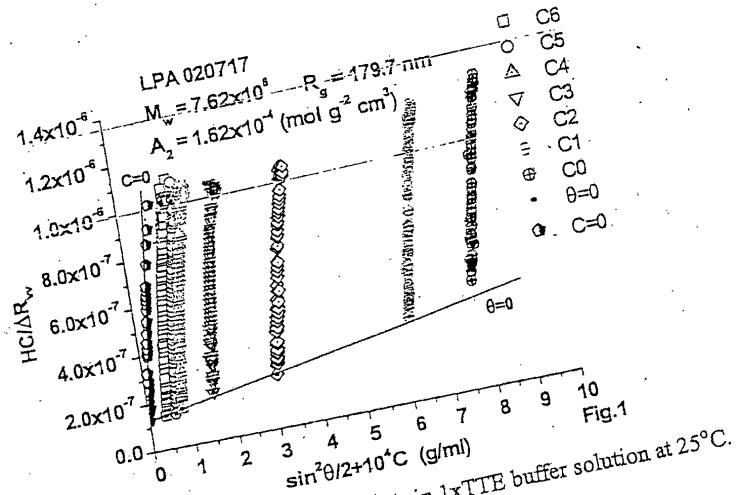


Fig. 1 Zimm plot of sample LPA in 1xTTE buffer solution at 25°C.

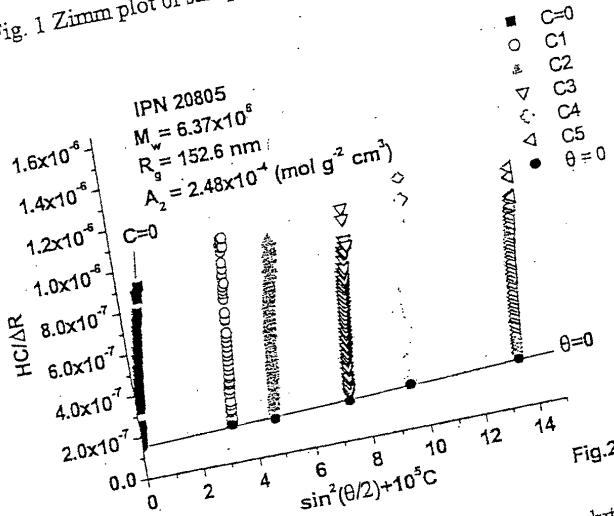


Fig. 2 Zimm plot of sample IPN in 1xTTE buffer solution at 25°C.

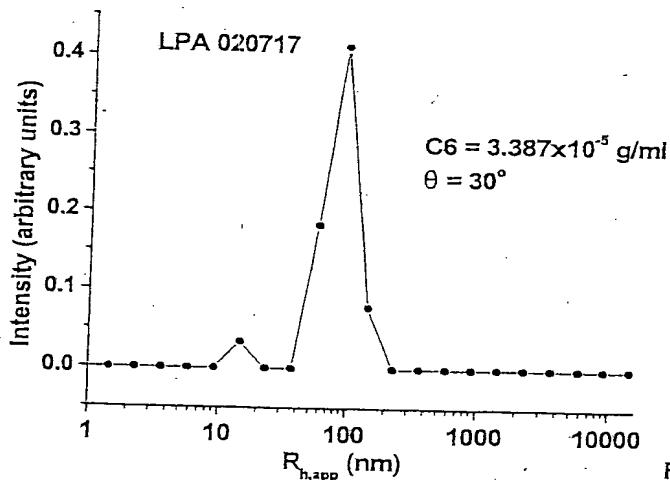


Fig.3

Fig. 3 Apparent hydrodynamic radius distribution of sample LPA measured at 25°C and scattering angle  $\theta = 30^\circ$ ,  $C = 3.387 \times 10^{-5}$  g/ml.

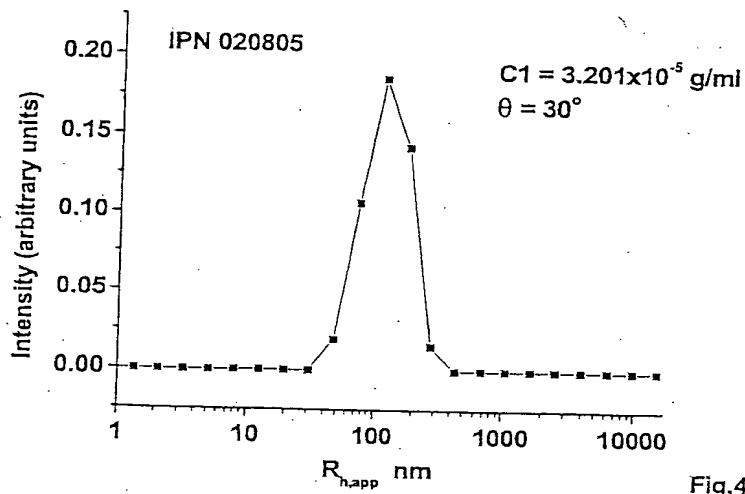


Fig.4

Fig.4 Apparent hydrodynamic radius distribution of sample IPN measured at 25°C and scattering angle  $\theta = 30^\circ$ ,  $C = 3.201 \times 10^{-5}$  g/ml.

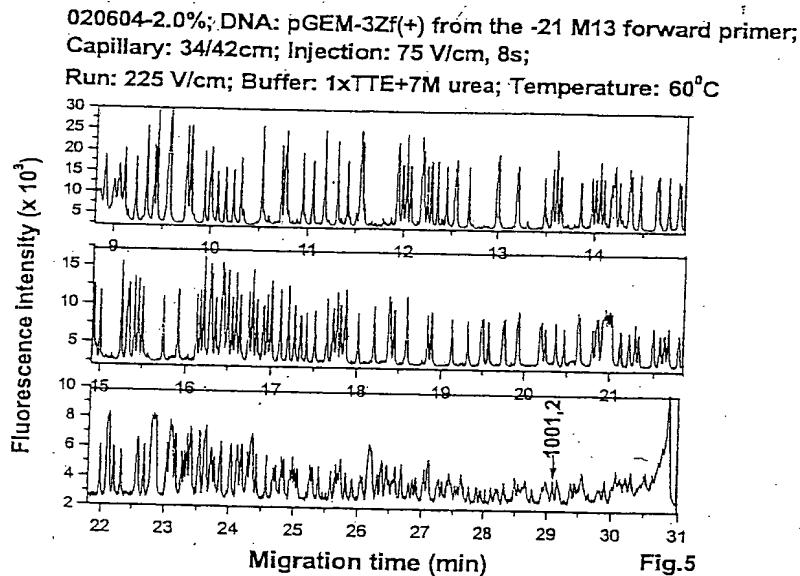


Fig. 5 Separation of DNA [pGEM-3Zf(+)] from the -21M13 forward Primer by CE in IPN/1xTTE+7M.Urea buffer solution, C = 2.0% g/ml at 60°C. Capillary effective length is 34 cm, ID/OD=75/365 (um).

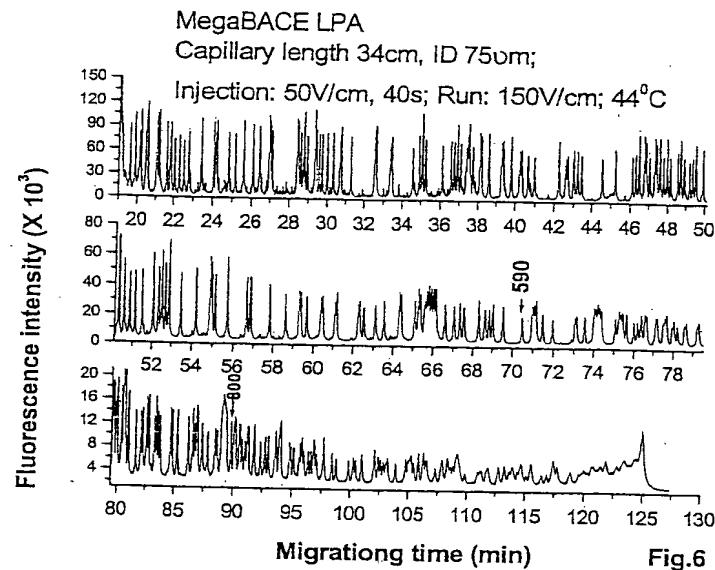


Fig.6

Fig. 6 Separation of DNA [PGEM-3Zf(+)] from the-21M13 forward Primer by CE in MegabACE LPA/1xMegabACE buffer, at 44°C and 150 V/cm. Capillary length is 34 cm, ID/OD=75/365 ( $\mu$ m).

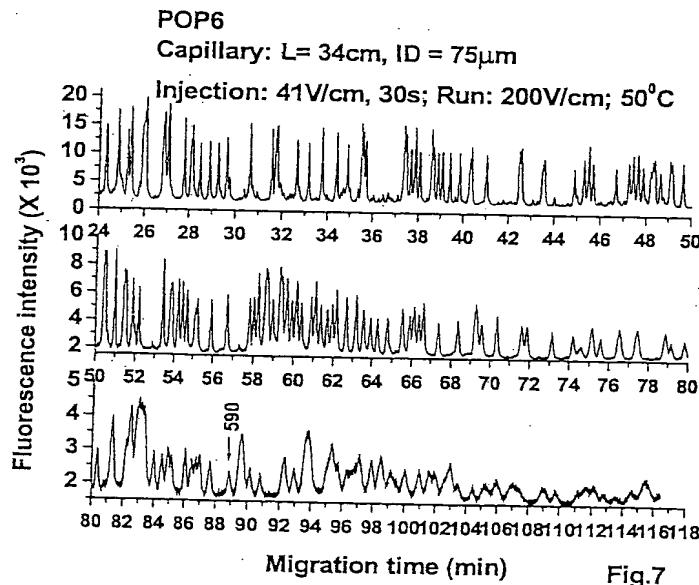


Fig.7

Fig.7 Separation of DNA [PGEM-3Zf(+)] from the-21M13 forward Primer] by CE in POP6/1xTTE buffer, at 50°C and 200 V/cm. Capillary length is 34 cm, ID/OD=75/365 ( $\mu$ m).

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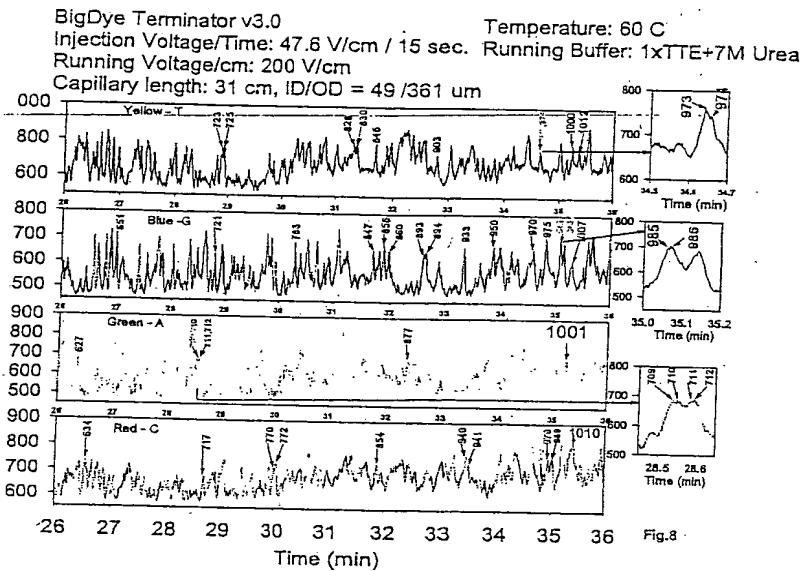


Fig.8. Last parts (base number from 600 to ~1000) of electrophoretic separation of DNA BigDye Terminator v3.0 by CE in

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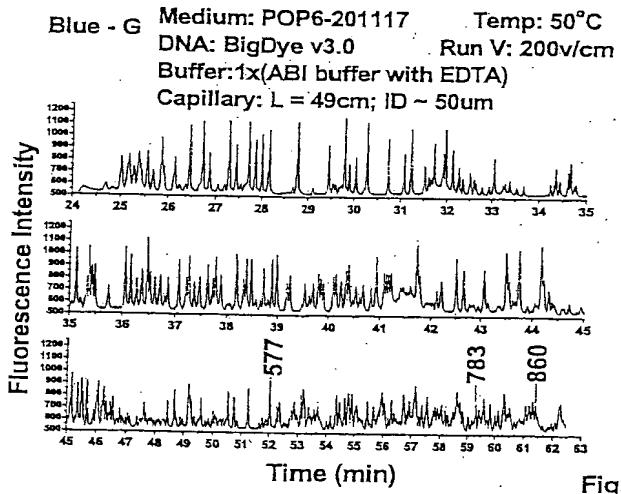


Fig.9

Fig. 9 Blue-G part of electrophoretic separation of DNA (BigDye Terminator v3.0) by CE in POP6/1xABI buffer solution.  
Instrument: ABI Prism 310 four colors single-capillary Genetic Analyser, at 50°C, Module seq POP6 (1mL) E. Capillary ID/OD = 50/361 (um).

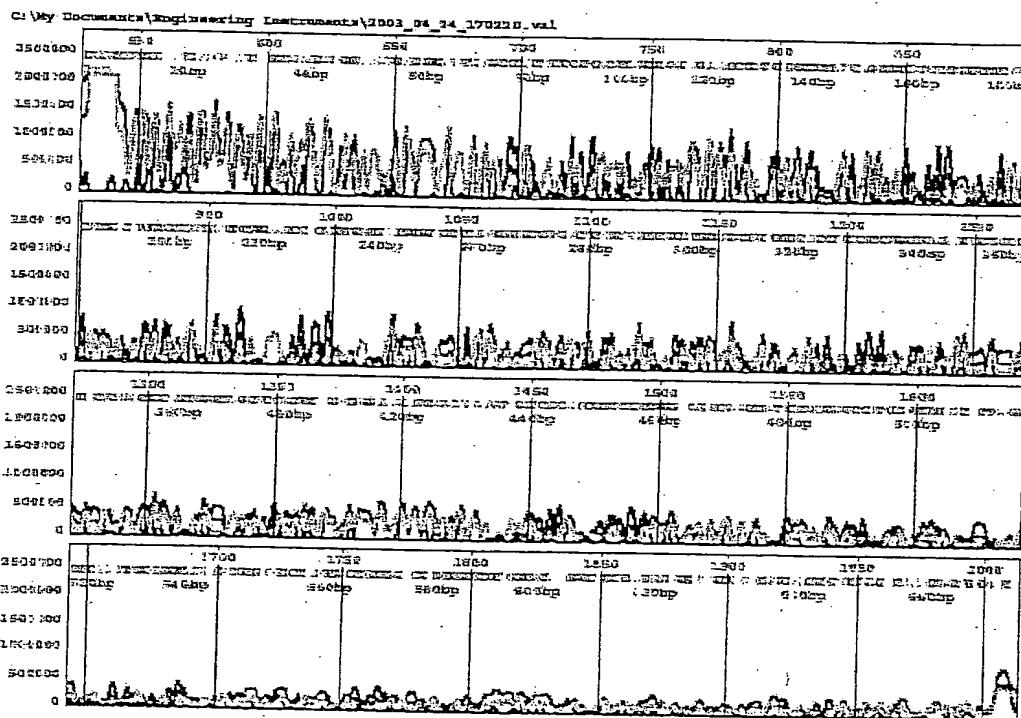


Figure 10 Four color DNA (BigDye Terminator v3.0) sequencing of 660 bp in less than ~33 min was achieved by Lab-made Sequencing Analyzer with 2.5% IPN/1xABI buffer as the separation medium. (Instrument and base calling software were made by Engineering Department of SUNY at Stony Brook).

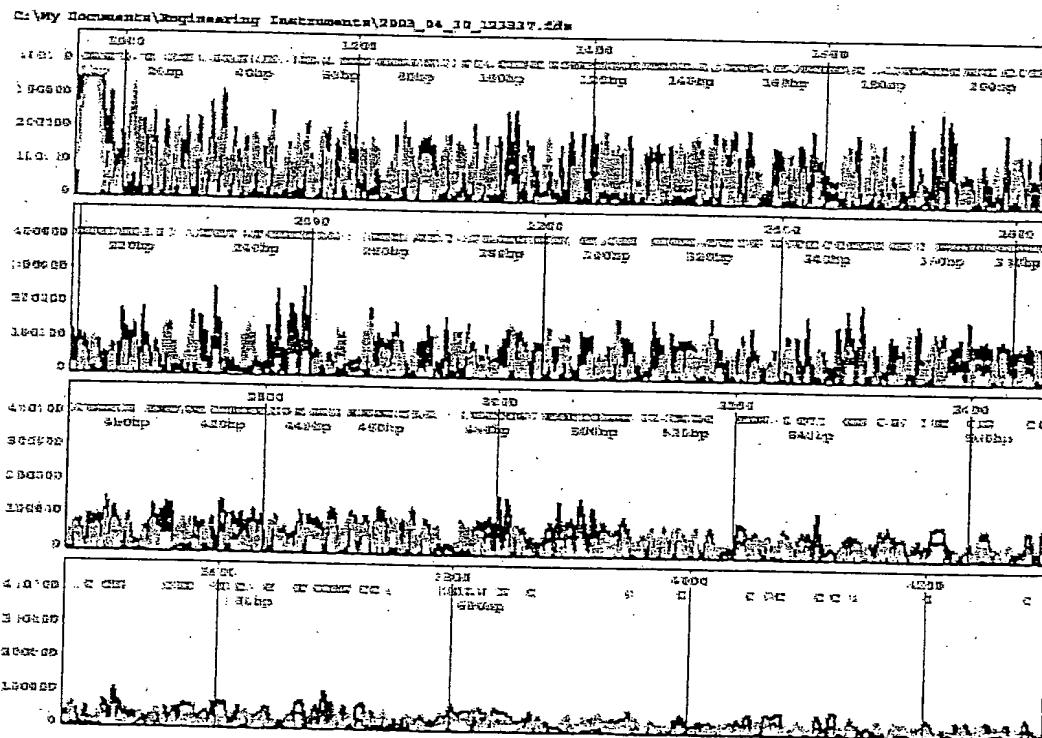


Figure 11. Four color DNA (BigDye Terminator v3.0) sequencing of 600 bp in ~63 min was achieved by Lab-made Sequencing Analyzer with POP7/1xABI buffer as the separation medium. (Instrument and base calling software were made by Engineering Department of SUNY at Stony Brook).

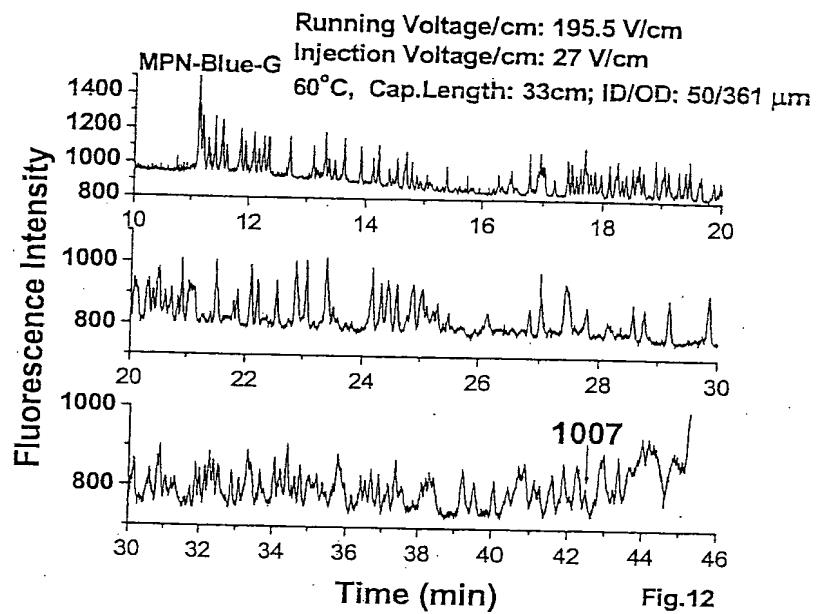


Fig. 12 Separation of DNA (BigDye Terminator v3.0) in LPA/PDMA IPN medium, in which the contents of LPA ( $MW = 7.6 \times 10^6$ ) and PDMA ( $MW \sim 470K$ ) 87 % and 17 %, respectively. Running field is 195.5 V/cm, with injection time of DNA being 20s at 27 V/cm. The capillary effective length is 33 cm, and ID/OD = 50/361 ( $\mu\text{m}$ ).

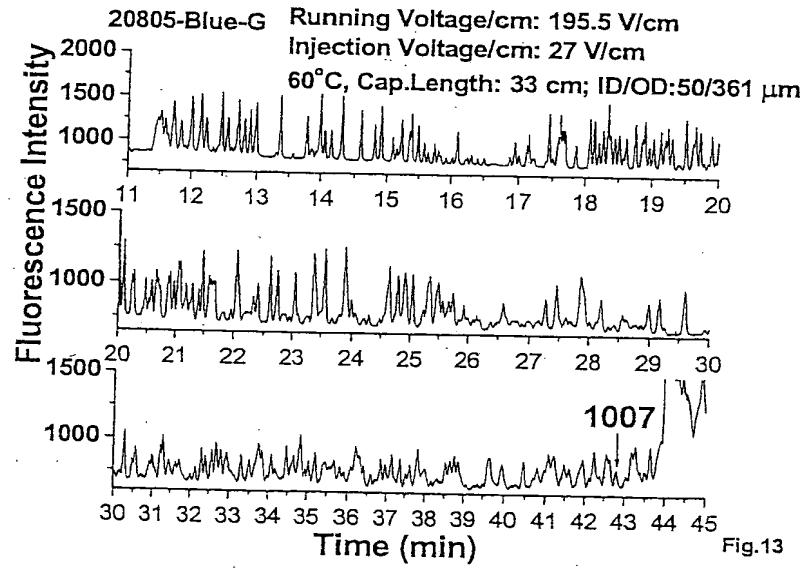


Fig. 13 Separation of DNA (BigDye Terminator v3.0) in IPN (20805)

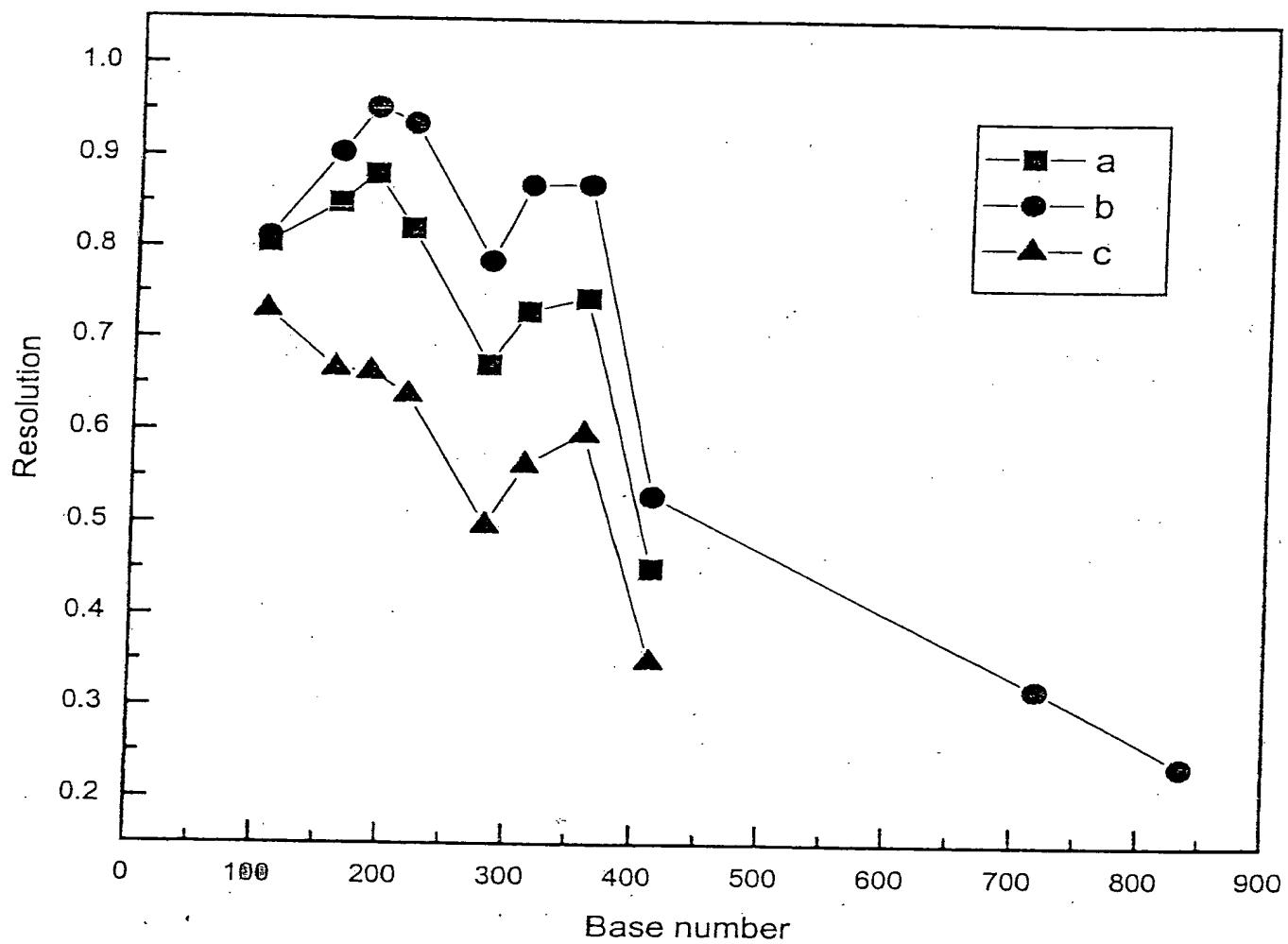


Figure 14

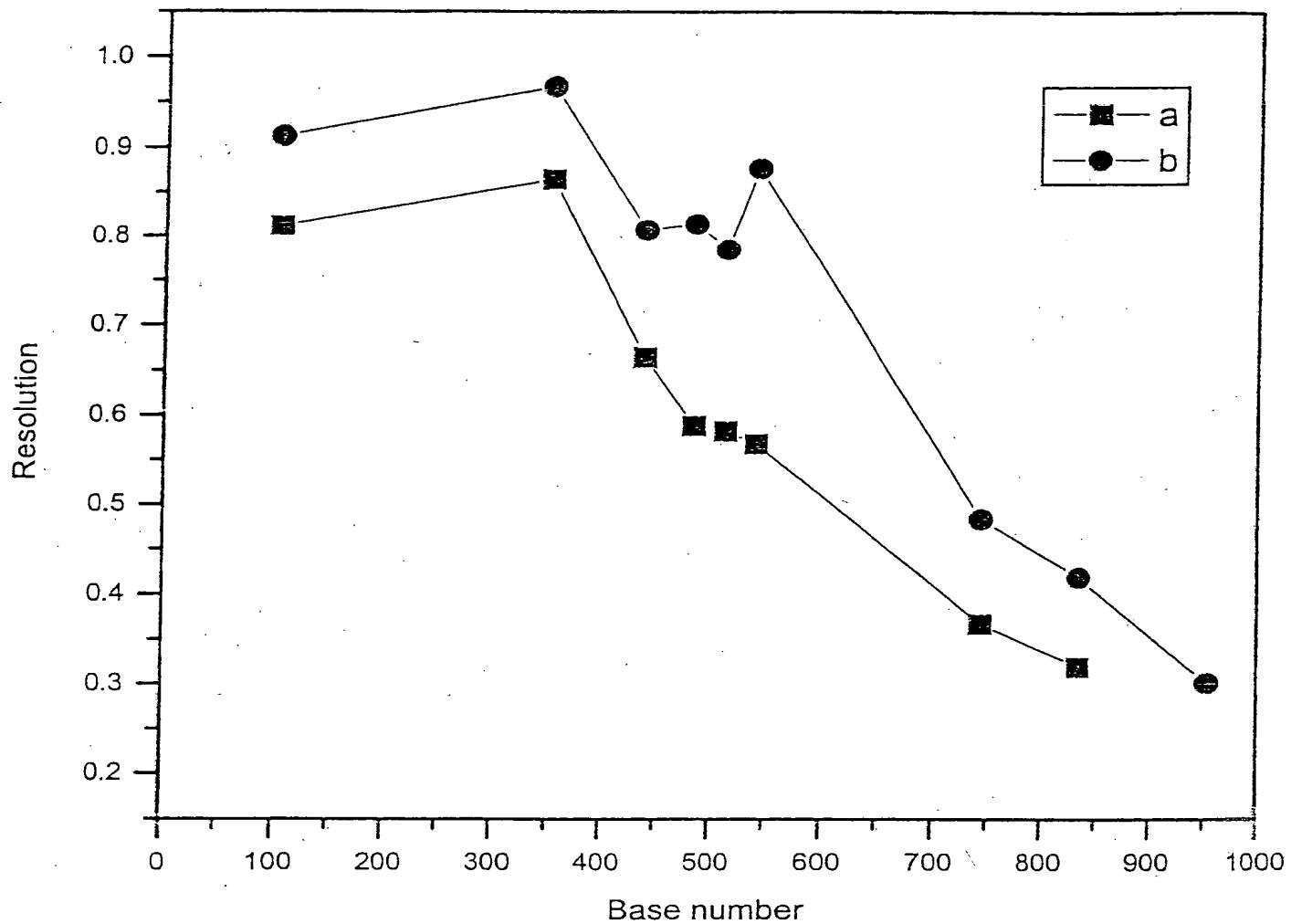


Figure 15

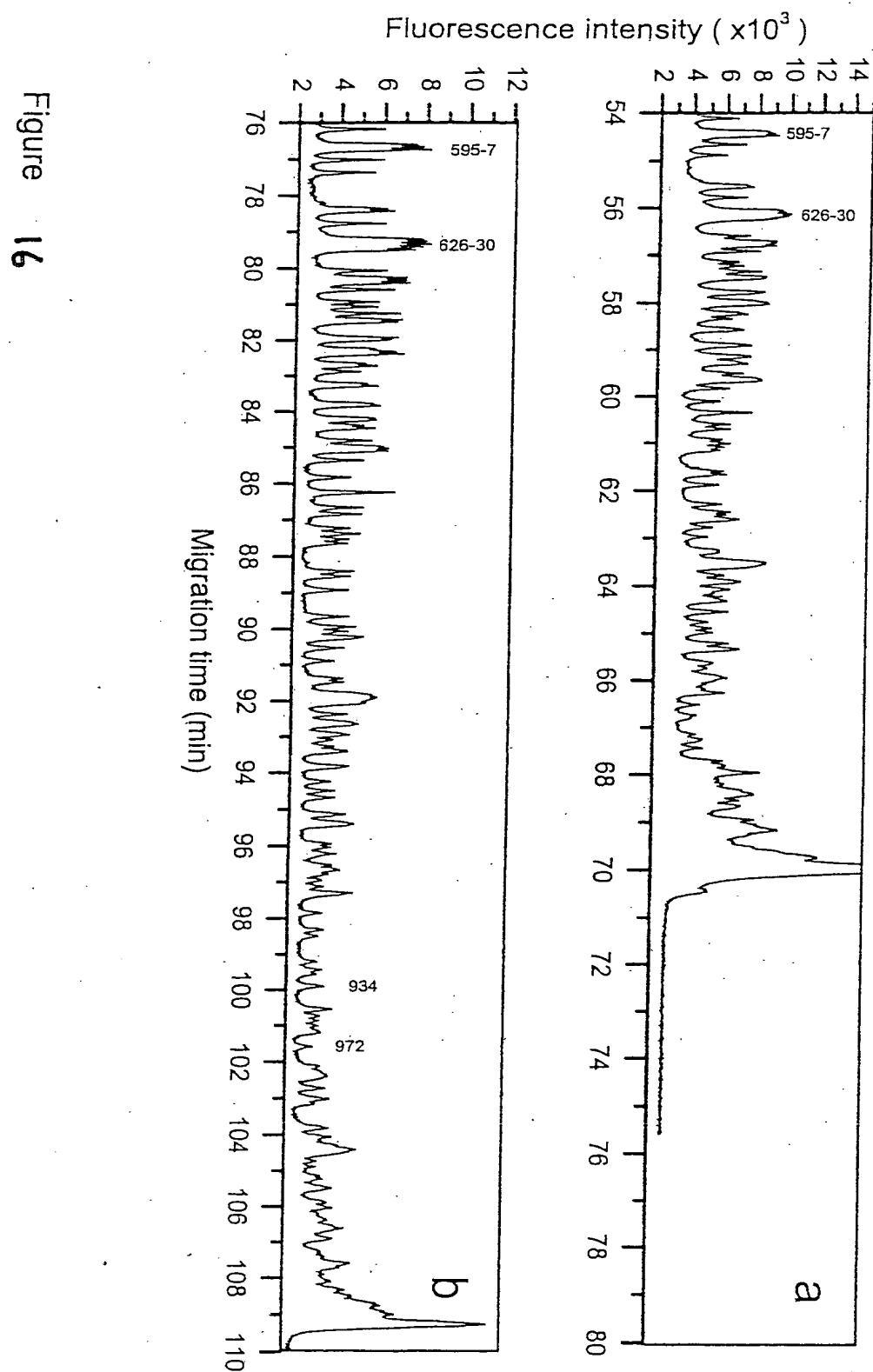


Figure 16

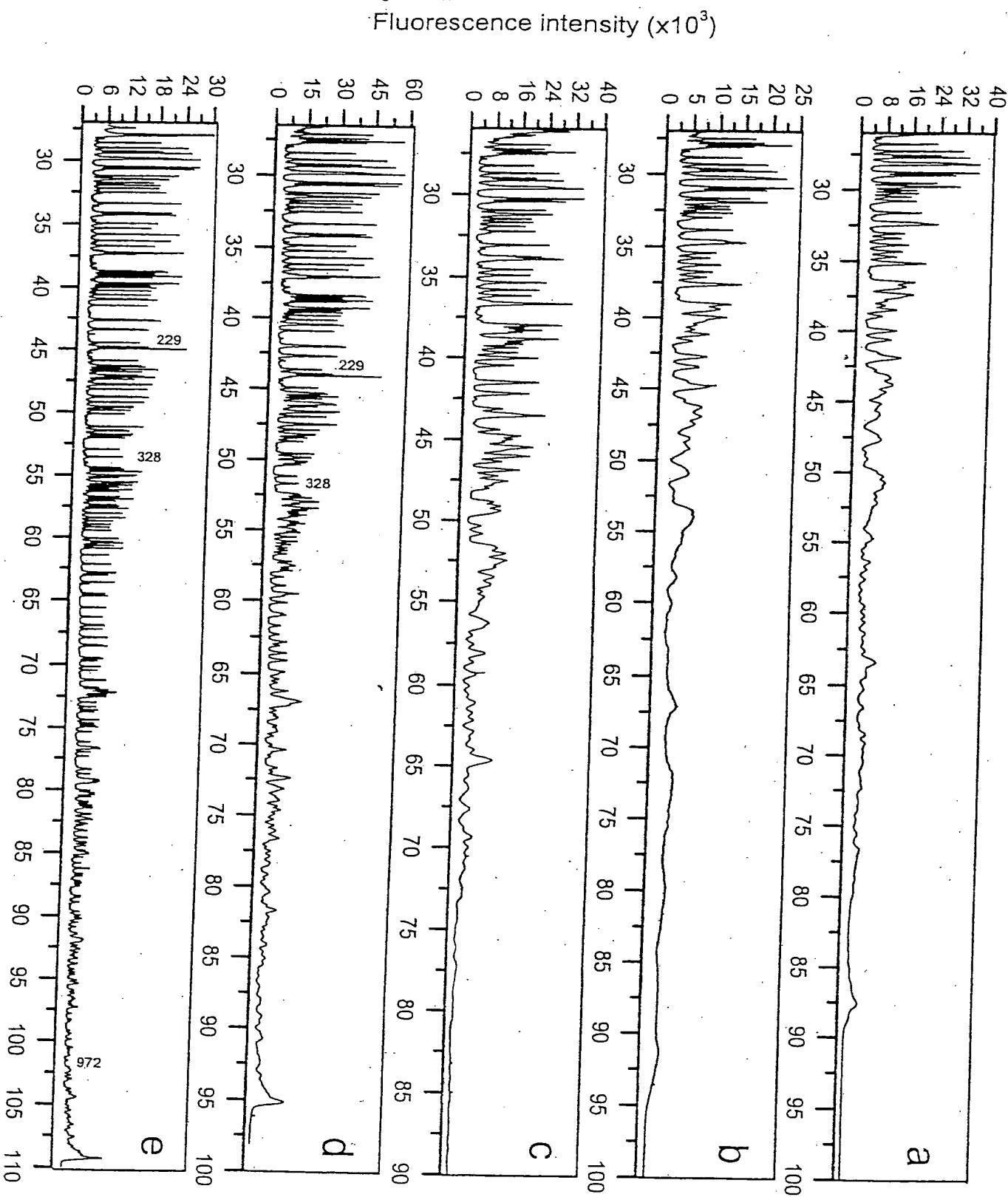


Figure 17

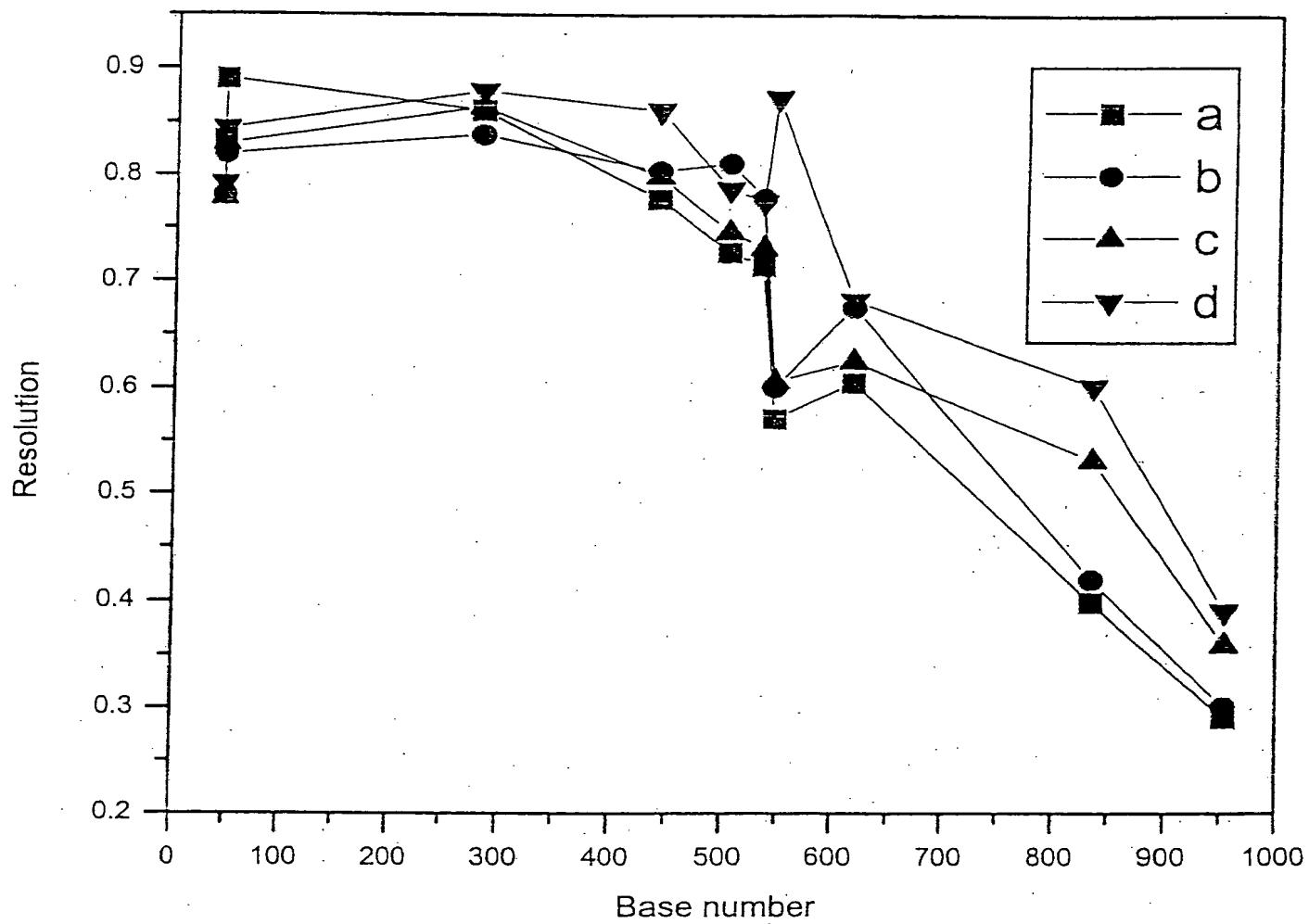
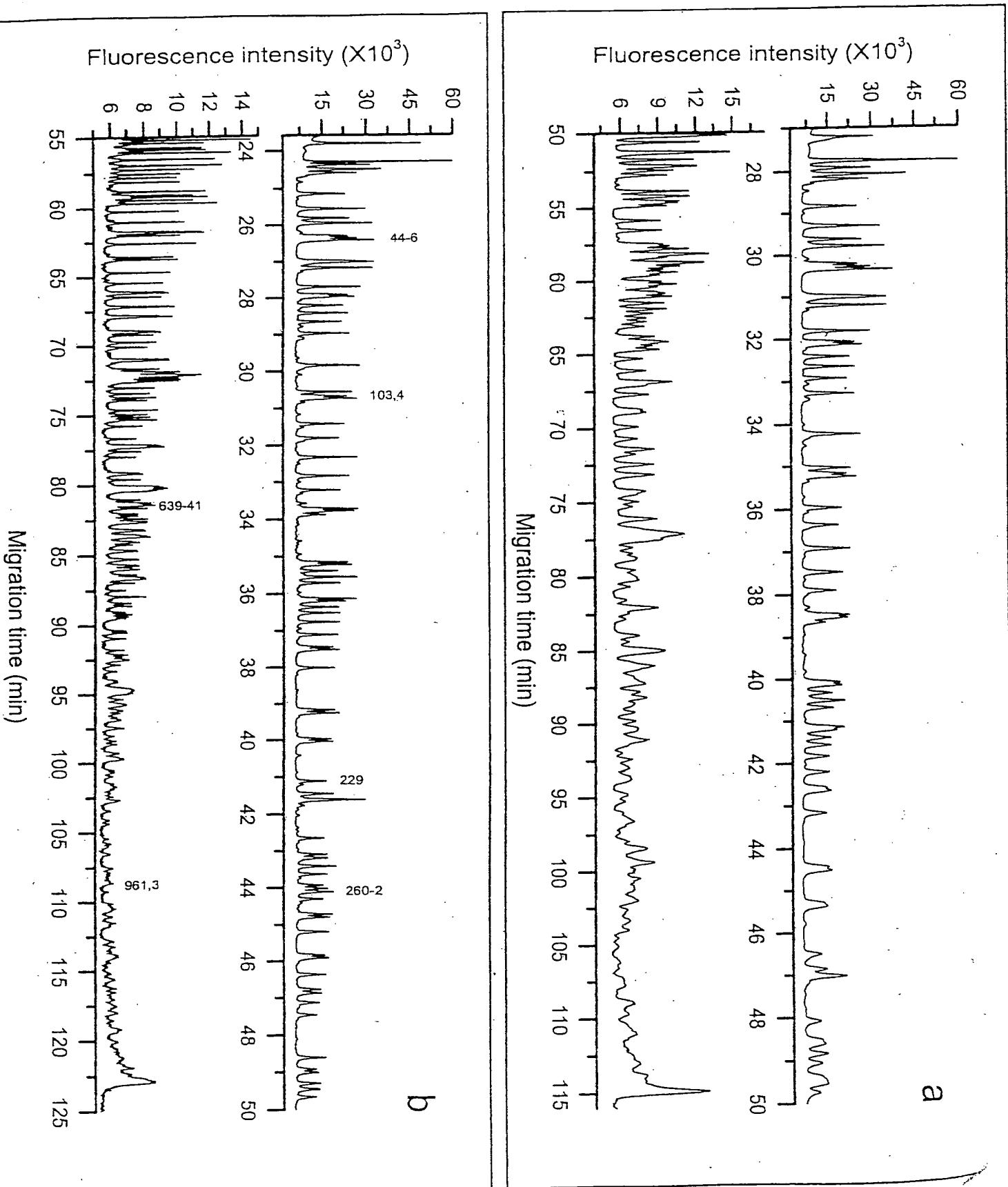


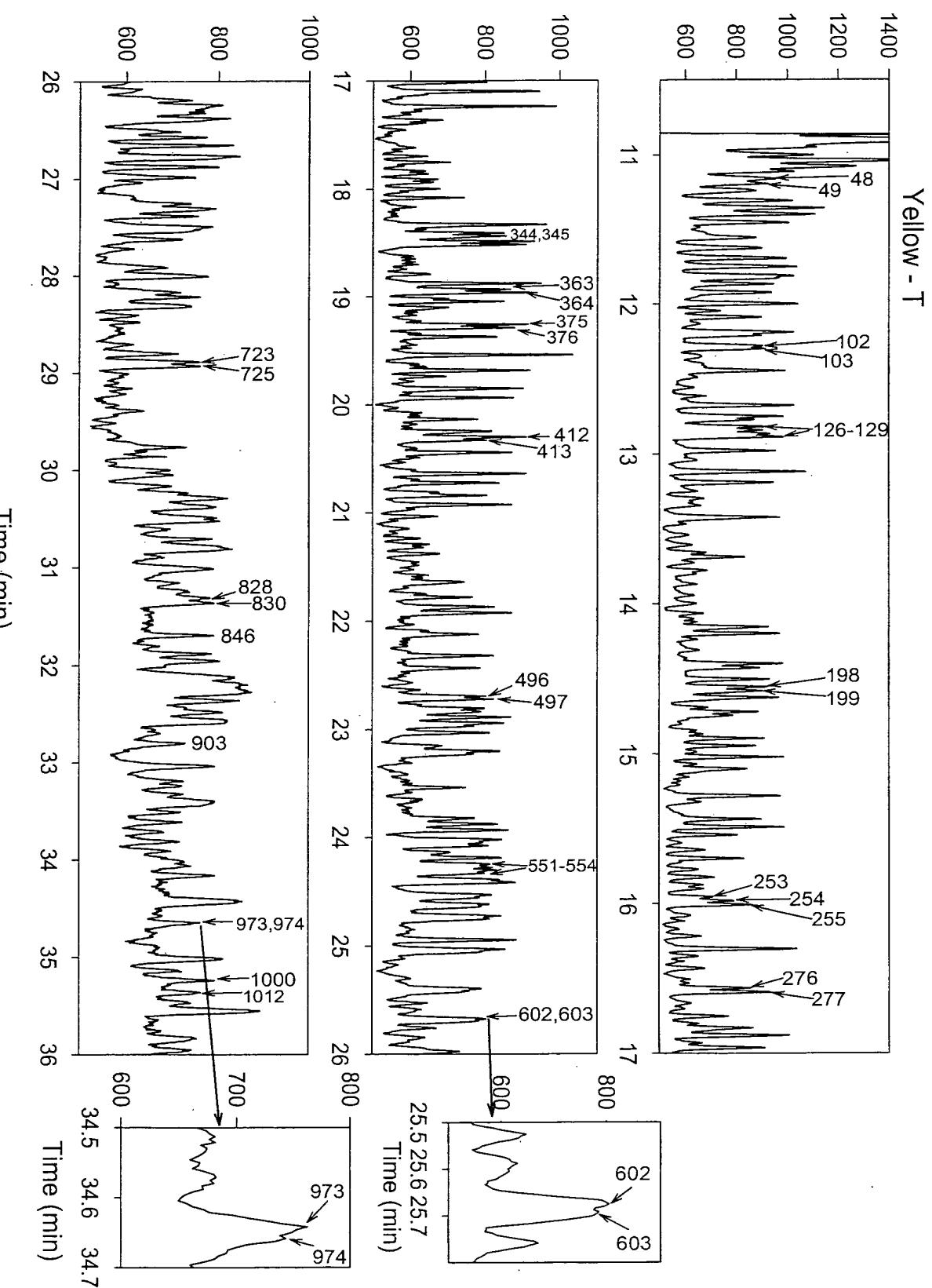
Figure 18



BigDye Terminator v3.0  
 Injection Voltage/Time: 47.6 V/cm / 15 sec.  
 Running Voltage/cm: 200 V/cm  
 Capillary length: 31 cm, ID/OD = 49 / 361 um

Temperature : 60° C  
 Running Buffer : 1xTTE+7M Urea

Figure 20



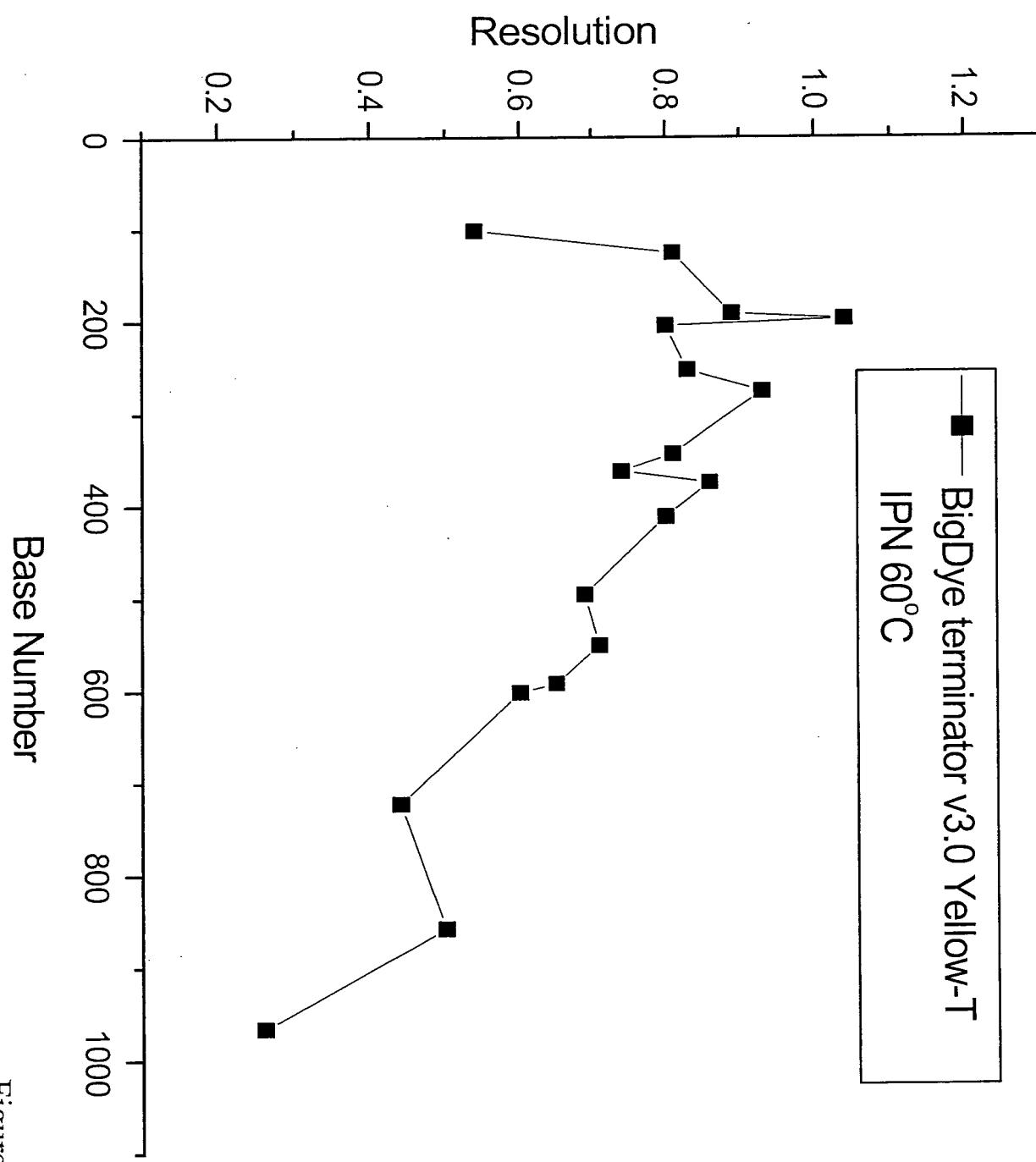


Figure 21